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Satoshi Hata

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EXAMINER

RIGGLEMAN, JASON PAUL

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/633,182	Applicant(s) HATA, SATOSHI	
	Examiner JASON P. RIGGLEMAN	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,6,8 and 9 is/are rejected.
- 7) ☐ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Applicant's amendments filed 3/28/2008 have been received. The current pending claims are 1, 4, 6, and 8-10. Claims 1 and 6 are amended. Claims 8-10 are new. Claims 2-3, 5, and 7 are cancelled.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 4, 6, and 8-10 have been considered but are moot in view of the new ground(s) of rejection. The drawing objection is withdrawn in view of the applicant's arguments and amendments.

Remarks

3. The "steam" turbine is considered as the intended use of the extraneous matter removing system, as there are no limitations present in the claims, which define the steam turbine. Therefore, little patentable weight has been given to this limitation.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya (Japanese Patent Publication No. 61-169627) in view of Hibara (Japanese Patent Publication No. 60-69214).

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6. Moriya teaches a turbine having a casing 1 defining a duct 2 and turbine moving blades (dynamic vane 6) rotating with a rotor 11 and a stator blade (dynamic vane 6) which is located upstream of the moving blade and is held on the casing side and housed within the duct 2. The duct is operatively positioned to introduce a fluid to the turbine blades and the moving blade (dynamic vane 6) is rotated by a fluid introduced into the duct 2. A pressure gage (differential pressure gauge 15) is operatively positioned to detect the pressure between the stator blade and moving blade. A first water injection nozzle 12 is disposed in the duct 2 and is connected to a water supply. The water injection nozzle 12 is disposed at a position upstream to the stator blade (dynamic vane 6). There is a control unit (16) for regulating the water injection nozzle 12 upon exceeding a predetermined pressure (water is injected until the pressure drops below the predetermined pressure) to remove dust.

7. Moriya does not teach a valve; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya to create a valve opened by a control unit as this is a common fluid control mechanism.

8. Moriya, as modified above, does not teach the closing of a water injection valves above a predetermined maximum pressure; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified above, to create a steam turbine in which cleaning is not performed if the pressure is dangerously high since blade cleaning would increase the pressure.

9. Moriya, as modified by above, does not teach water injection nozzles located in the stator blades; however, Hibara teaches the use of water injection from a stator blade to clean stator blade scale (with the nozzle distributing liquid onto a surface of the stator blade). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya with Hibara to create a means to prevent the adhesion of scale. The combination of Moriya, as modified by Hibara, teaches the cleaning of the back surface of the moving blades (by the injection nozzles located in the stator blades) because the moving blades are located downstream of the stator blades, Fig. 1 of Moriya.

10. Moriya, as modified by Hibara, does not teach a control unit controlling both first and second valves; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified by Hibara to create a cleaning device with controlled first and second valves to control the cleaning process to achieve the expected result.

11. Moriya, as modified by Hibara does not teach a plurality of injection nozzles and stator cleaning nozzles; however, it has been held that duplication of parts is an obvious modification (*In re Harza* 124 USPQ 378). It would have been would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified by Hibara, to create additional cleaning action to achieve the expected result.

12. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya (Japanese Patent Publication No. 61-169627) and Hibara (Japanese Patent Publication No. 60-69214) in view of Rice (US Patent No. 4,384,452).

13. Moriya teaches a turbine having a casing 1 defining a duct 2 and turbine moving blades (dynamic vane 6) rotating with a rotor 11 and a stator blade (dynamic vane 6) which is located upstream of the moving blade and is held on the casing side and housed within the duct 2. The duct is operatively positioned to introduce a fluid to the turbine blades and the moving blade (dynamic vane 6) is rotated by a fluid introduced into the duct 2. A pressure gage (differential pressure gauge 15) is operatively positioned to detect the pressure between the stator blade and moving blade. A first water injection nozzle 12 is disposed in the duct 2 and is connected to a water supply. The water injection nozzle 12 is disposed at a position upstream to the stator blade (dynamic vane 6). There is a control unit (16) for regulating the water injection nozzle 12 upon exceeding a predetermined pressure (water is injected until the pressure drops below the predetermined pressure) to remove dust.

14. Moriya does not teach a valve; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya to create a valve opened by a control unit as this is a common fluid control mechanism.

15. Moriya, as modified above, does not teach the closing of a water injection valves above a predetermined maximum pressure; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been

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obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified above, to create a steam turbine in which cleaning is not performed if the pressure is dangerously high since blade cleaning would increase the pressure.

16. Moriya, as modified by above, does not teach water injection nozzles located in the stator blades; however, Hibara teaches the use of water injection from a stator blade to clean stator blade scale (with the nozzle distributing liquid onto a surface of the stator blade). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya with Hibara to create a means to prevent the adhesion of scale. The combination of Moriya, as modified by Hibara, teaches the cleaning of the back surface of the moving blades (by the injection nozzles located in the stator blades) because the moving blades are located downstream of the stator blades, Fig. 1 of Moriya.

17. Moriya, as modified by Hibara, does not teach a control unit controlling both first and second valves; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified by Hibara to create a cleaning device with controlled first and second valves to control the cleaning process to achieve the expected result.

18. Moriya, as modified by Hibara does not teach a plurality of injection nozzles and stator cleaning nozzles; however, it has been held that duplication of parts is an obvious modification (*In re Harza* 124 USPQ 378). It would have been would have been

obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified by Hibara, to create additional cleaning action to achieve the expected result.

19. In regards to claim 6, Moriya, as modified by Hibara, does not disclose stator blade surface reforming; however, Rice discloses coating the stator blade, which is a type of surface reforming described by Applicant (col. 9, ll. 35-55; see entire document as well). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Moriya, as modified by Hibara, with Rice for the benefit of having to do fewer repairs on the equipment.

20. Moriya, as modified by Hibara, as modified by Rice does not teach the specific reforming process; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified by Hibara, as modified by Rice to use a conventional reforming process (such as film coating) to achieve the expected result.

21. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya (Japanese Patent Publication No. 61-169627) in view of Rice (US Patent No. 4,384,452).

22. Moriya teaches a turbine having a casing 1 defining a duct 2 and turbine moving blades (dynamic vane 6) rotating with a rotor 11 and a stator blade (dynamic vane 6) which is located upstream of the moving blade and is held on the casing side and housed within the duct 2. The duct is operatively positioned to introduce a fluid to the turbine blades and the moving blade (dynamic vane 6) is rotated by a fluid introduced

into the duct 2. A pressure gage (differential pressure gauge 15) is operatively positioned to detect the pressure between the stator blade and moving blade. A first water injection nozzle 12 is disposed in the duct 2 and is connected to a water supply. The water injection nozzle 12 is disposed at a position upstream to the stator blade (dynamic vane 6). There is a control unit (16) for regulating the water injection nozzle 12 upon exceeding a predetermined pressure (water is injected until the pressure drops below the predetermined pressure) to remove dust.

23. Moriya does not teach a valve; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya to create a valve opened by a control unit as this is a common fluid control mechanism.

24. Moriya, as modified above, does not teach the closing of a water injection valves above a predetermined maximum pressure; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified above, to create a steam turbine in which cleaning is not performed if the pressure is dangerously high since blade cleaning would increase the pressure.

25. Moriya, as modified by above, does not teach water injection nozzles located in the stator blades; however, Hibara teaches the use of water injection from a stator blade to clean stator blade scale (with the nozzle distributing liquid onto a surface of the stator blade). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya with Hibara to create a means to prevent the adhesion of

scale. The combination of Moriya, as modified by Hibara, teaches the cleaning of the back surface of the moving blades (by the injection nozzles located in the stator blades) because the moving blades are located downstream of the stator blades, Fig. 1 of Moriya.

26. Moriya, as modified by Hibara, does not teach a control unit controlling both first and second valves; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified by Hibara to create a cleaning device with controlled first and second valves to control the cleaning process to achieve the expected result.

27. Moriya, as modified by Hibara does not teach a plurality of injection nozzles and stator cleaning nozzles; however, it has been held that duplication of parts is an obvious modification (*In re Harza* 124 USPQ 378). It would have been would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified by Hibara, to create additional cleaning action to achieve the expected result.

28. Moriya, as modified above, does not teach the turbine moving blade surface reforming; however, Rice discloses coating the moving blade (Column 9, Lines 35-55). Coating is described by the Applicant as a type of surface reforming. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Moriya, as modified above, with Rice for the benefit of having to do fewer repairs on the equipment.

29. Moriya, as modified by Hibara, as modified by Rice does not teach the specific reforming process; however, it has been held that an obvious choice in design is not patentable (*In re Kuhle* 188 USPQ 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriya, as modified by Hibara, as modified by Rice to use a conventional reforming process (such as film coating) to achieve the expected result.

Allowable Subject Matter

30. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

31. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON P. RIGGLEMAN whose telephone number is (571)272-5935. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art Unit 1792

Jason P Riggleman
Examiner
Art Unit 1792

/J. P. R./
Examiner, Art Unit 1792